

MATERIAL SAFETY DATA SHEET



RUBIGAN* A.S. TURF FUNGICIDE

Emergency Phone: 800-992-5994
Dow AgroSciences • Indianapolis, IN 46268

Effective Date: 01/01/98
Product Code: 20142
MSDS: 003998

1. PRODUCT AND COMPANY IDENTIFICATION:

PRODUCT: RUBIGAN* A.S. TURF FUNGICIDE

COMPANY IDENTIFICATION:

Dow AgroSciences
P.O. Box 681428
9330 Zionsville Road
Indianapolis, IN 46268-1189
www.dowagro.com

2. COMPOSITION/INFORMATION ON INGREDIENTS:

Fenarimol: alpha-(2-Chlorophenyl)-alpha- (4-chlorophenyl)-5-pyrimidine-methanol
CAS# 060168-88-9 12.21%
Other Proprietary Ingredients,
total, including: 87.79%
Propylene Glycol(1) CAS# 000057-55-6

(1)NOTE: Listed as 1,2-Propanediol under the Pennsylvania State Right-to-Know Law

This document is prepared pursuant to the OSHA Hazard Communication Standard (29 CFR) 1910.1200). In addition, other substances not 'Hazardous' per this OSHA Standard may be listed. Where proprietary ingredient shows, the identity may be made available as provided in this standard.

3. HAZARDOUS IDENTIFICATIONS:

EMERGENCY OVERVIEW

Hazardous chemical. Light tan to cream colored liquid. Mild odor. May cause slight eye irritation. Water based product. Avoid freezing. Toxic to fish and aquatic organisms.

EMERGENCY PHONE NUMBER: (U.S.) 800-992-5994

POTENTIAL HEALTH EFFECTS: This section includes possible adverse effects which could occur if this material is not handled in the recommended manner.

EYE: May cause slight eye irritation. Corneal injury is unlikely.

SKIN: Essentially non-irritating to skin. Did not cause allergic skin reactions when tested in guinea pigs. A single prolonged exposure is not likely to result in the material being absorbed through skin in harmful amounts. The LD50 for skin absorption in rabbits is >4000 mg/kg.

INGESTION: Single dose oral toxicity is low. The oral LD50 for rats is >2000 mg/kg. Small amounts swallowed incidental to normal handling operations are not likely to cause injury; swallowing amounts larger than that may cause injury.

INHALATION: Mists are not likely to be hazardous.

SYSTEMIC (OTHER TARGET ORGAN) EFFECTS: In animals, has been shown to cause liver and kidney effects. Repeated excessive ingestion may cause central nervous system effects.

CANCER INFORMATION: Did not cause cancer in long-term animal studies.

TERATOLOGY (BIRTH DEFECTS): Fenarimol did not cause birth defects in animal studies but did produce other fetal effects at doses nontoxic to the mother.

REPRODUCTIVE EFFECTS: Fenarimol has been shown to interfere with reproduction and fertility in animal studies.

4. FIRST AID:

EYES: Flush with plenty of water.

SKIN: Wash off in flowing water or shower.

INGESTION: If swallowed, seek medical attention. Do not induce vomiting unless directed to do so by medical personnel.

INHALATION: Remove individual to fresh air if effects occur. Consult a physician.

NOTE TO PHYSICIAN: No specific antidote. Supportive care. Treatment based on judgment of the physician in response to reactions of the patient.

5. FIRE FIGHTING MEASURES:

FLASH POINT: Not applicable

METHOD USED: Not applicable

FLAMMABLE LIMITS

LFL: Water based product

UFL: Water based product

AUTO-IGNITION TEMPERATURE: Water based product

EXTINGUISHING MEDIA: Water, CO2 or dry chemicals

FIRE AND EXPLOSION HAZARDS: If product is involved in fire and water evaporates, toxic, irritating vapors may be produced.

FIRE-FIGHTING EQUIPMENT: Wear full protective clothing and positive-pressure, self-contained breathing apparatus.

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6. ACCIDENTAL RELEASE MEASURES: (See Section 15 for Regulatory Information)

ACTION TO TAKE FOR SPILLS: Use absorbent materials to contain and clean up small spills and dispose as waste. Report large spills to CHEMTREC and contact Dow AgroSciences for assistance. Prevent runoff.

7. HANDLING AND STORAGE:

SPECIAL PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: Keep out of reach of children. Causes eye irritation. Harmful if swallowed, inhaled, or absorbed through the skin. Avoid breathing spray mist and contact with skin, eyes, or clothing. Avoid freezing. Do not store near heat or open flame. Store in original container only. Users should wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet. For handling relative to end-use of this product, read the product label for further information concerning the use of personal protective equipment (PPE) under the Worker Protection Standard of 1993.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION:

These precautions are suggested for conditions with a high potential for exposure. If handling procedures are such that there is only a low potential for exposure, less protection may be needed. Emergency conditions may require additional precautions.

EXPOSURE GUIDELINE(S): Propylene glycol: AIHA WEEL is 50 ppm total, 10 mg/m³ aerosol only.

ENGINEERING CONTROLS: Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines.

RESPIRATORY PROTECTION: Atmospheric levels should be maintained below the exposure guidelines. If respiratory irritation is experienced, use a NIOSH approved air-purifying respirator.

SKIN PROTECTION: For handling prior to end-use, no precautions other than clean, body-covering clothing should be needed.

EYE PROTECTION: Use safety glasses.

9. PHYSICAL AND CHEMICAL PROPERTIES:

BOILING POINT: (@ 1 atmosphere) Approximately 212°F, 100°C

VAPOR PRESSURE: Approximately 0.000000022 mm Hg at 25°C

VAPOR DENSITY: 1.178 relative to air at 25°C

SOLUBILITY IN WATER: Disperses in water

SPECIFIC GRAVITY: 1.033 to 1.055 g/ml at 20°C

APPEARANCE: Light tan to cream colored liquid

ODOR: Mild odor

pH: (aqueous 50/50) 6.0 to 7.5

10. STABILITY AND REACTIVITY:

STABILITY: (CONDITIONS TO AVOID) None known.

INCOMPATIBILITY: (SPECIFIC MATERIALS TO AVOID) Avoid freezing.

HAZARDOUS DECOMPOSITION PRODUCTS: Nitrogen oxides and other toxic vapors may be formed if product is involved in fire.

HAZARDOUS POLYMERIZATION: Does not occur.

11. TOXICOLOGICAL INFORMATION:

For detailed toxicological data, write the address shown in Section 1 or call the emergency phone number.

MUTAGENICITY (EFFECTS ON GENETIC MATERIAL): In vitro and animal mutagenicity studies were negative.

12. ECOLOGICAL INFORMATION:

For detailed ecological data, write the address shown in Section 1 or call the emergency phone number.

ENVIRONMENTAL DATA: This pesticide is toxic to fish. Do not apply directly to water or wetlands. Do not contaminate water when disposing of equipment washwaters. Drift and runoff from treated areas may be hazardous to aquatic organisms in neighboring areas.

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13. DISPOSAL CONSIDERATIONS:

DISPOSAL METHOD: Do not contaminate food, feed, or water by storage or disposal. Pesticide wastes are toxic. Improper disposal or excess pesticide, spray mixture, or rinsate is a violation of federal law. If wastes resulting from the use of this product cannot be disposed of according to label instructions, dispose of these wastes at an approved facility. Contact your state pesticide or environmental control agency, or the hazardous waste representative at the nearest EPA regional office for guidance.

14. TRANSPORT INFORMATION:

For DOT regulatory information, if required, consult transportation regulations, product shipping papers or contact your Dow AgroSciences representative. Container sizes may be regulated differently.

15. REGULATORY INFORMATION:

NOTICE: The information herein is presented in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ from one location to another; it is the buyer's responsibility to ensure that its activities comply with federal, state or provincial, and local laws. The following specific information is made for the purpose of complying with numerous federal, state or provincial, and local laws and regulations.

U.S. REGULATIONS

SARA 313 INFORMATION: This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR

CHEMICAL NAME	CAS NUMBER	CONCENTRATION
FENARIMOL O-ALPHA-(2-CHLOROPHENYL)-ALPH	060168-88-9	12.21%

SARA HAZARD CATEGORY: This product has been reviewed according to the EPA "Hazard Categories" promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

An immediate health hazard

TOXIC SUBSTANCES CONTROL ACT (TSCA):

All ingredients are on the TSCA inventory or are not required to be listed on the TSCA inventory.

STATE RIGHT-TO-KNOW: The following product components are cited on certain state lists as mentioned. Non-listed components may be shown in the composition section of the MSDS.

CHEMICAL NAME	CAS NUMBER	LIST
1,2-PROPANEDIOL	000057-55-6	PA1

PA1=Pennsylvania Hazardous Substance (present at greater than or equal to 1.0%).

OSHA HAZARD COMMUNICATION STANDARD:

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) RATINGS:

Health	2
Flammability	0
Reactivity	0

16. OTHER INFORMATION:

MSDS STATUS: Revised to 16 Section MSDS. Updated all sections.

EPA Registration Number: 62719-142

The Information Herein Is Given In Good Faith, But No Warranty, Express Or Implied, Is Made. Consult Dow AgroSciences For Further Information.